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THE HORN SPEAKER

Overhauling Your Radio Set

By A. P. PECK

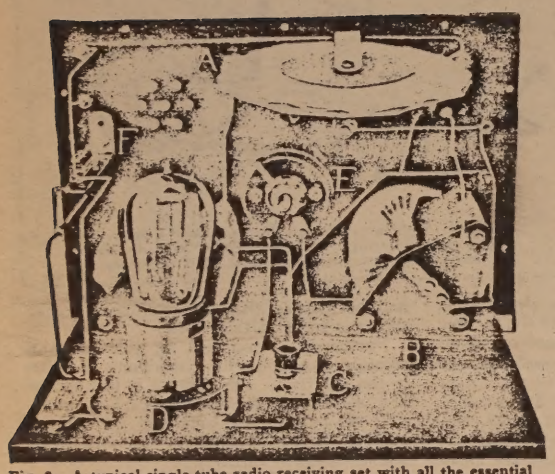


Fig. 3. A typical single tube radio receiving set with all the essential parts lettered for reference.

THE spring of the year seems to be universally set aside for the cleaning and overhauling of all appliances necessary to human welfare. "Spring cleaning" is a well-known by-word to the housewife. Every spring the careful automobile driver either spends his Sundays in completely cleaning or overhauling the car, or else drives it to his favorite garage to have this work done. And so it should be with every radio set owner. During the long winter evenings, when "DX" reception is at its best, the radio set operator seldom, if ever, thinks of looking over his set unless something goes radically wrong with it so that reception becomes impossible. Thus, in order to keep up a receiving set at its highest efficiency, and to avoid annoying trouble just at a time when the set is most desired, a certain time of the year must be set aside for going over the set completely.

In order to satisfactorily carry through the overhauling of a receiving set, a definite system must be followed. The object of this article is to point out the various steps in the overhauling of an average receiving set. You will find that practically everything contained herein will pertain at least in part to your particular type of set, regardless of its style. Owners of crystal detector receiving sets will take care of their various coils and variable condensers in exactly the same manner as is described for vacuum tube sets. In the last part of this article will be found a few notes for the especial benefit of those using crystal detector receiving sets, either in ordinary crystal circuits or in a reflex circuit using vacuum tubes in combination with the crystal detector.

It is a very good idea to determine beforehand just when you are going to start overhauling your set. It is best to contemplate spending at least a day in this work and, after deciding upon the time, see that you have the following materials on hand. With these at your command, you can proceed quickly and systematically with the cleaning and overhauling and you will not have to stop to procure other materials during the process. Beside your regular radio tools and soldering materials you will need:

Fine sandpaper.
A fine file.
Shellac.
Thin lubricating oil.
Two or three strips of cloth free from lint.
A soft, clean varnish brush, one inch wide.
Several pipe cleaners.
A generous stick of sealing wax.
A strip of flannel.
A battery voltmeter.

THE ANTENNA

The logical place to start in with the overhauling of a radio set is at the antenna and ground. The antenna is the long wire located either outdoors or within the house, which, in turn, is connected by means of another wire to the radio receiving set, and the whole of which serves to pick up the radio waves sent out by various broadcast stations. When an aerial is suspended indoors and away from sudden atmospheric changes, as well as rain and snow, there is very seldom any trouble with it unless the wire connecting the antenna itself with the receiving set becomes broken. In such a case, it must be mended by soldering the two ends together after thoroughly scraping them. For complete instructions on soldering, refer to the article by the writer which appeared in the March issue of RADIO NEWS.

With the outside antenna, however, the troubles are slightly different. Here corrosion will often take place, due to the action of the elements on the wire. The corrosion is particularly noticeable at the joints, that is, where the antenna and lead-in are connected. This joint should, of course, always be soldered, but even in such an event there is often sufficient corrosion to prevent good connection between the antenna and the lead-in wires. Such can readily be determined by inspection. Lower the antenna to the ground and look over the joints thoroughly. You may find small cracks in the solder, an evidence of corrosion. In such a case, unsolder the joint, scrape both of the wires thoroughly and resolder.

Much has been written in various publications regarding the effect of corrosion on the antenna wire, aside from the joints, upon transmission and reception. It will, however, be found, in the case of broadcast reception, that even a quite badly corroded antenna wire will give excellent results, provided the connection between the antenna and lead-in is firmly soldered and electrically perfect. In transmitting sets, particularly of low power and those operating on a short wavelength, corrosion of this nature has a detrimental effect, but as far as the broadcast listener is concerned, it may be completely disregarded. Therefore, after you have made sure that all the joints on your antenna are perfect, you may entirely forget about the corrosion on the rest of the wire.

Now that you have a perfectly soldered joint, it is a good idea at this time to guard against further corrosion. An excellent method of accomplishing this is illustrated in Fig. 1. Wrap several layers of friction tape over the joint, continuing the wrapping for an inch or so on either side of the twisted parts of the wires. Draw the tape tightly so that is will adhere firmly to the wire. Then paint this tape covering with shellac, being sure that all of the tape, as well as a short length of wire on either side of the covered portion, is completely covered by the liquid. The aerial can then be immediately hoisted into place, allowing the shellac to dry after the antenna is in position.

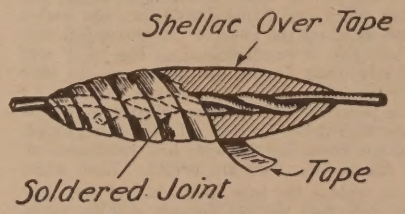
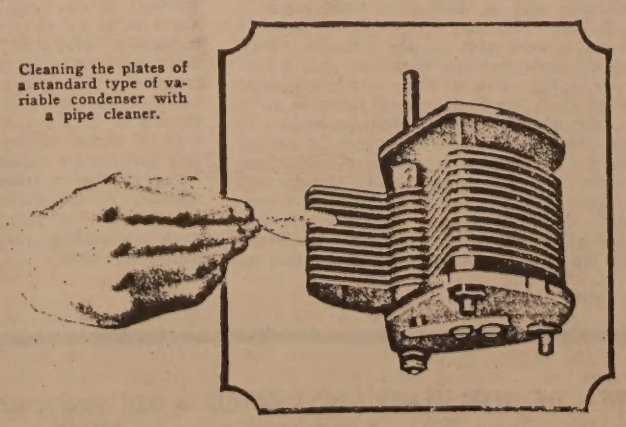


Fig. 1. The above illustration shows how to protect a soldered joint from corrosion by the use of several layers of friction tape coated with shellac.

Cleaning the plates of a standard type of variable condenser with a pipe cleaner.



THE AERIAL SWITCH

If your lead-in is provided with an aerial switch so that the antenna may be connected to the ground when not used for reception, this switch should be looked after. It is probably located out in the open and, therefore, quite subject to corrosion. Clean the blade and jaws with fine sandpaper so that they make a good contact. Unless the wires connected to the switch are soldered in lugs which, in turn, are clamped under screws, remove the wires, polish them thoroughly with fine sandpaper and replace, tightening the machine screws as much as possible.

If a lightning arrester is used, be sure that here also the connections are clean and tight. If that type of arrester is employed, which is equipped with a spring clip for fastening the connections, remove the wires, clean them and insert them in the clips after bending the latter out a little so as to restore the spring of the metal and so as to insure firm contact. If the wires are held to the arrester by machine screws and nuts, clean as before and tighten the nuts thoroughly.

All of these precautions are taken so as to be sure that the current set up in the antenna by the radio waves will reach the receiving set with as much strength as possible. Now, that this has been accomplished, we must provide a satisfactory return connection. That is, the ground connection must be carefully and thoroughly made or otherwise all of the time spent in working on the antenna will bring small results. The average radio receiving set is grounded to a water pipe or to a length of iron pipe driven into the ground and the wire is connected thereto by means of a ground clamp. Here is another point where corrosion may take place, particularly if the connection is exposed to the outside atmosphere. If the ground clamp is badly corroded, replace it with a new one after thoroughly cleaning the pipe at the point where the connection is made. Here you can also prevent future corrosion to a very great extent by the use of tape and shellac. Cover the entire ground clamp, an inch or so of the wire connected to it and an inch of the pipe on either side of the clamp with tape, leaving no openings for the entrance of air to the clamp and pipe. Then apply a coat of shellac and allow it to dry. The effect of the tape and shellac is to prevent dampness and atmospheric moisture from reaching the metals and so corroding them at the point of contact.

Before we leave the subject of collective agencies, as antennae or aerials are sometimes termed, let us note in passing the loop antenna. An ordinary type is illustrated in Fig. 2 and the two flexible wires which connect this piece of apparatus to the re-

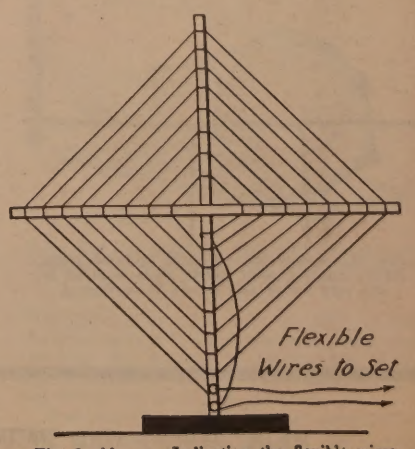


Fig. 2. Above: Indicating the flexible wires leading from a loop antenna to a receiving set which are liable to break in use.

ceiving set are shown. As the loop is turned, these flexible wires are twisted, and through continued use will sometimes break. Often the wires under the coverings break, but the open point is not noticeable because the insulation remains intact. Such an event would be denoted by a sudden cessation of reception or at least a greatly reduced volume. In such a case, install new flexible wires. Even though there is no trouble as yet with these flexible wires, but if the insulation is badly worn and twisted, install a new pair anyway. This will guard against future trouble.

After you have finished your complete inspection of the antenna and ground systems, you will be ready to start on the receiving set itself. The first thing to do is to disconnect all wires from the receiving set, including the antenna, ground, all batteries and phones or loud speaker. Better remove all wires from the batteries also, so that the loose ends will not short circuit. Place the batteries to one side until they are ready for their share of attention. Do the same with the loud speaker or phones and then remove the receiving set from the cabinet. You will then be ready to completely inspect the various component parts of the set under the best conditions. Here you will find that a flashlight will come in handy for getting a closer view of the various parts that may happen to be hidden by other instruments. A flashlight may often disclose a loose or broken connection or a defective instrument which would otherwise pass unnoticed.

We show in Fig. 3 a rear view of a typical radio receiving set with the various parts that will bear inspection and overhauling. If careful attention is paid to every point outlined below, you may replace the set in the cabinet with perfect assurance that it is ready for another season of good results.

The various points indicated in Fig. 3 are as follows: A indicates the inductance coil, which may be any one of many various types. B is a variable condenser. Practically all of them are of a type similar to this one and will be taken care of in the same manner. C indicates a combined grid condenser and variable grid leak. This instrument is completely sealed in and usually needs no attention whatsoever, unless it has been used so often that the resistance unit is worn away. In such a case, it will be necessary to replace the leak with a new one. D indicates the vacuum tube socket in this receiving set, while E is the rheostat and F an open circuit jack.

We will now deal with the care of the various instruments in detail. Consider all types of inductance coils, an example of which is indicated by A, in Fig. 3. Dust collecting on the surfaces of coils has a detrimental effect which cannot be overlooked. This may be quickly and easily removed if a soft, clean varnish brush about one inch wide is used. Simply brush the dust off the surface of the coil, carefully working into all crevices and corners. This

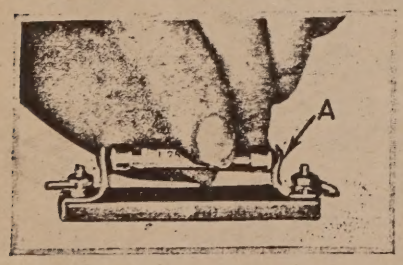


Fig. 5.
A cartridge type grid leak, the care of which is described in the text.

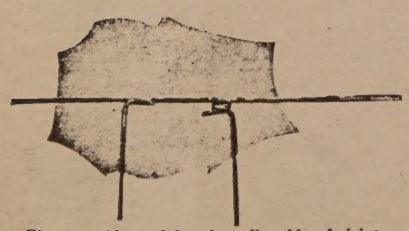


Fig. 8. Above left: A well soldered joint. Above right: A joint which, while soldered, is not very strong and should be resoldered.

Fig. 10. Using a tooth brush and alcohol for cleaning the surface of a crystal.

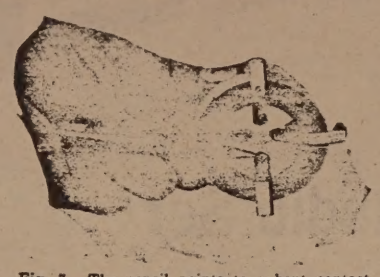


Fig. 7. The pencil points to a bent contact spring on the vacuum tube socket.

applies to all types of coils, either of the low loss type or those wound on cylindrical tubes. In any event, remove all dust.

The condenser next comes in for its share of attention. Dust often collects between the plates of the condenser and thus forms a partial connection between the various plates with the result that the operating efficiency of the receiving set is lowered. This point would seem to be a very hard one to get at, but if you will take an ordinary pipe cleaner and bend it into a loop, as shown in Fig. 4, you will be able to run it in and out between the plates of the condenser and so remove every trace of dust and dirt therein. Treat all of the variable condensers in your receiving set in this manner, being careful to get in between each and every plate.

The variable type of grid leak was mentioned above. If, however, you use one of the tubular types, such as illustrated in Fig. 5, it is well to remove the cartridge from the clips, bend the latter together slightly and, with fine sandpaper, brighten the tips of the cartridge so that they will make good contact with the springs. Then replace the leak in the clips.

Now we will turn to the vacuum tube socket. All the remarks below will pertain to each and every socket in the receiving set, regardless of the number. Each one should receive the same careful attention. A standard socket is shown at D, in Fig. 3, and another one in Fig. 6. In the latter, we have removed the socket from the set so that the parts of it can be more plainly seen. Note the flat springs pointed to by the pencil in the photo. Often these springs become weakened, due to continued pressure, and do not make perfect contact with the prongs of the tube. In such an event, you can reach one finger inside the tube socket and bend up the ends of the springs so that their life is restored and so that they will firmly press against the prongs on the base of the tube. These prongs are indicated by the pencil in Fig. 7. They should be noticed also and if they are at all dull or corroded, scrape them lightly with fine sandpaper or a file so that they are bright. Then when you replace the tube in the socket you may be sure that perfect contact will be made between the prongs and the springs and no losses will occur at this point.

We will now consider the rheostat indicated by E, in Fig. 3. You may have noticed occasionally in the operation of your set that the filament seems to flicker occasionally and at the same time music is affected. This may frequently be due to a loose contact arm on the rheostat, which should be immediately remedied. So, in your overhauling, look at these arms and move them back and forth several times in order to see whether there is any looseness. If the arm does not seem to be making perfect contact with the wire wound on the sector, remove the arm, bend it down slightly and replace. It should then make perfect contact. With carbon-pile rheostats you will seldom, if ever, find any trouble. Just brush off the outside of the container so that no dust collects thereon, forming a leakage path, and further attention will be unnecessary.

The jack, indicated by F, will give a little trouble if dust is allowed to accumulate in any great quantity on the short insulating strips which separate the spring or springs from the frame. The varnish brush mentioned above will remove any dust found here.

After you have completed the cleaning of all the instruments, bring a soft cloth into play to dust off the panel, the baseboard and all the crevices around them. You will not be able to get it all out with a cloth, but do the best you can. Then take the stick of sealing wax mentioned above, rub it briskly with the piece of flannel cloth until it is thoroughly electrified and run the end of the wax along the various cracks and crevices where the cloth could not reach. The wax, being electrified, will attract fine particles of lint and dust to it that cannot be removed by any other process and the result will be a very clean set. This method of removing foreign material can also be applied to other points on the receiving set where a cloth or brush cannot be used.

Next, look over the connections of the set. You may find one or more connections made as indicated in Fig. 8. Such a type is very bad and is liable to cause trouble, as it may break when least expected. In such an event, get out your soldering iron and make the connection so that it appears as shown in Fig. 8. Such a connection is as nearly electrically perfect as it is possible to make one. After you have gone over the wiring, take each and every wire between your fingers and tug it slightly at any place where it is connected to other wires. You will quickly locate any loose and broken connections by this method and they may be quickly and easily repaired.

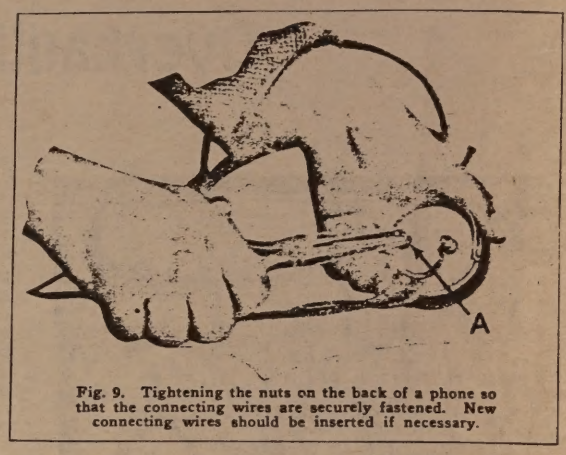


Fig. 9. Tightening the nuts on the back of a phone so that the connecting wires are securely fastened. New connecting wires should be inserted if necessary.

This completes all of the overhauling work necessary on the set itself. The loud speaker will seldom, if ever, need overhauling, as most of them are completely enclosed and so are not subject to the action of dust and weather conditions. If, however, you have a radio receiving set which employs headphones, these will need some attention. If you will look through the small hole in the center of the cap you will undoubtedly notice a small rusty spot inside. Removing the cap, you will find that this rusty spot is on a thin disk of soft iron. You can remove this disk, but take great care not to bend it. Remove the rust with fine sandpaper and place a drop of very thin oil on the metal and spread it out. Then wipe the disk off carefully, still taking care not to bend it, and replace in the phones in the same position as it was removed. In other words, have the same side of the diaphragm, as this disk is called, on the inside as was in that position before the cap was removed. Do the same with the disk, or diaphragm, in the other receiver. If the diaphragms are so badly rusted that the metal seems to have been weakened, address the manufacturers of your receivers for a new pair of diaphragms. Also, while you have the phones in your hands, examine the cord and make sure that it is not frayed or broken. If it is, install a new one. Also, with a pair of pliers, tighten the nuts on the backs of the receivers, as indicated by A, in Fig. 9. If the tips enter the casing of the receiver, tighten up the set-screws with a screwdriver while you have the cap and diaphragm off the receiver proper.

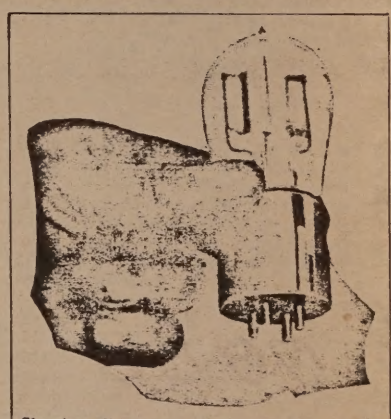
Before you put your radio set into operation, and even before you connect the batteries to it, test these latter with a voltmeter. Undoubtedly the "A" battery, regardless of its type, has received careful attention, as a drop in voltage here is quickly noticeable. However, the "B" batteries are often neglected. If you use dry "B" batteries, test each unit separately. If a 22½-volt unit has dropped to less than 19 volts, replace it. In the case of a 45-volt unit, 39 volts is about the lowest at which it will give satisfactory results. Storage "B" batteries require constant attention just the same as "A" batteries and have undoubtedly been cared for regularly. Therefore, in your overhauling, just give these batteries their usual care.

TO CRYSTAL USERS

Below we give a few points which will be of interest to those who use crystal reciving sets or who are employing crystal detectors in reflex receivers. It may be that recently the signals have started to get dim or the set does not seem to work as well as it formerly did. If the overhauling of the set as described above does not seem to bring back satisfactory results, remove the crystal from its clamp or cup and scrub the surface carefully with alcohol, taking care not to touch that surface with the fingers. A small brush, as indicated in Fig. 10, will greatly assist in this cleaning process. While you have the crystal out of the cup, clean the end of the contact which touches the surface of the crystal. A fine file or sandpaper will accomplish this very nicely, and will provide a clean contact for the freshly cleaned crystal.

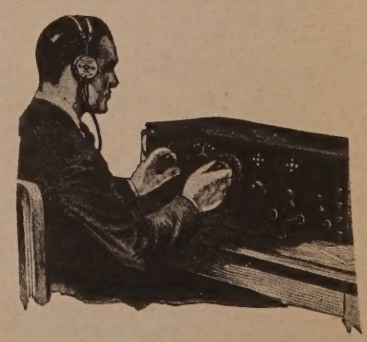
Just because your radio receiving set happens to be functioning quite properly at the present moment, do not think that it may not need overhauling. If it has been in use for a period of six months or so, it is undoubtedly ready for a complete overhauling and the time to do it is before something goes wrong. So now set aside your day for the spring cleaning of your radio set and be assured that you will never regret the time spent in this work.

Furthermore, you will be able to enjoy summer reception with a minimum of noises in the set itself. Static alone is bad enough and you should take every precaution to prevent set noises from annoying you. Overhauling the instruments as described above will accomplish this.



Showing the prongs or contact pins on the base of a standard vacuum tube such as used in radio receiving sets.

Radio News for May, 1925



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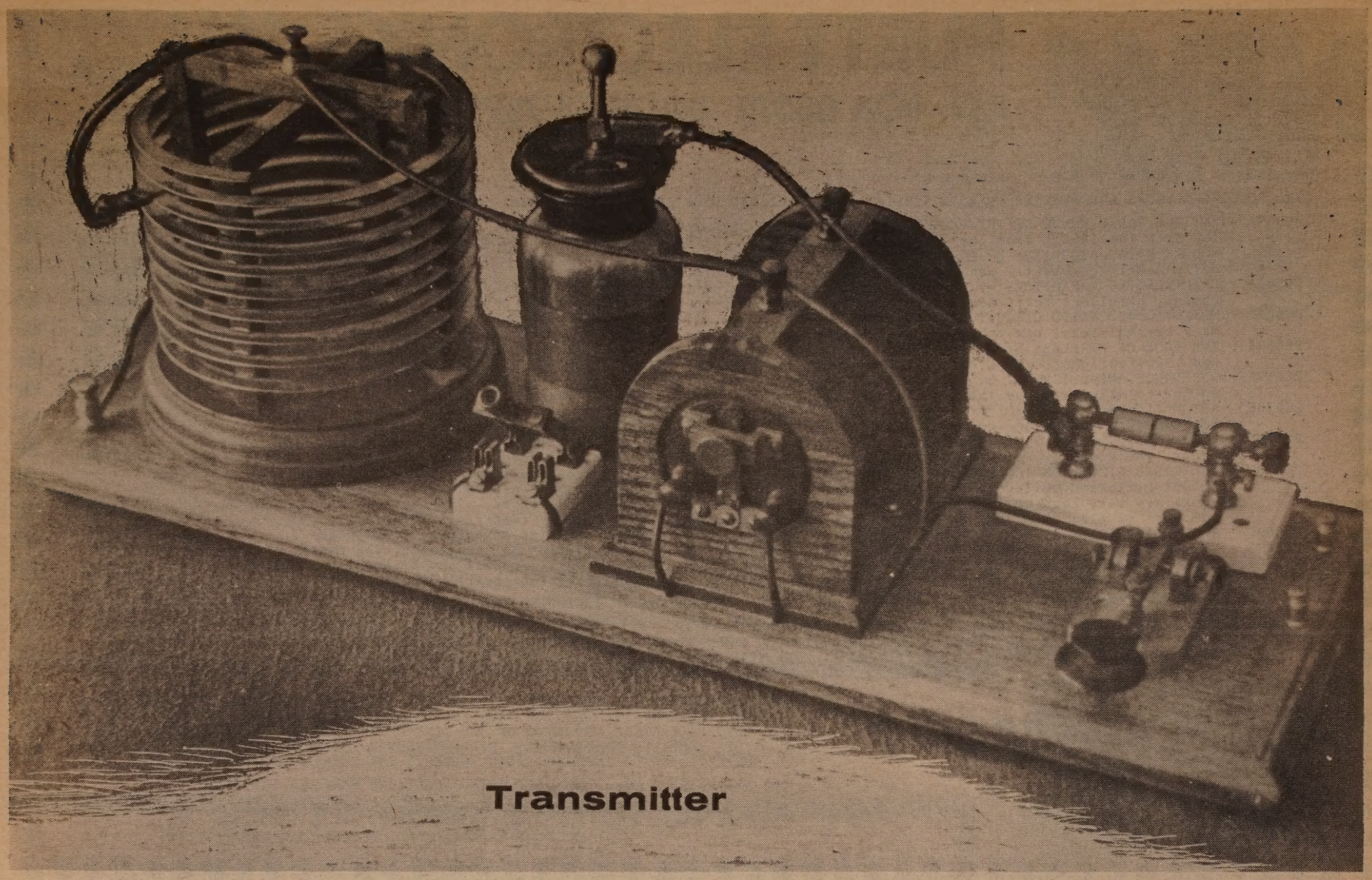

Jim Sargent placed this spark transmitter in the Ellis County Museum for a special showing the past several months. The transmitter uses original components on a board prepared a few years ago. The unit represents about 1912 with an Eico Bulldog Spark Coil, Central Scientific Leyden jar capacitor, helix has no name and the key is a Mesco. Jim lives in Mesquite, Texas and The Ellis County Museum is in Waxahachie, Texas.

FOR YOUR COLLECTION OR MUSEUM

Make a Loose Coupler

There is nothing complicated about the making or operating of a receiving circuit employing a coupler.

There is no connection between the windings of the coil marked primary and the other marked secondary but when a received current passes through the former, it has the effect of setting up a similar current in the latter. The intensity of the current in the secondary with reference to that in the primary may be varied by moving the secondary coil in or out of the primary. It is very seldom that all of the turns in either coil are used, and therefore the greatest strength of signal is obtained when the center point of the active turns in the primary is directly above the center point of the active turns in secondary. However, this location sometimes tends to set up what is known as mutual induction between the coils themselves resulting in irregularities which may only be overcome by shifting the position of one coil with relation to the other. The advantage of this type of tuner is that variation of the coupling which is shifting the center points permits the best reception of desired signals and tends to eliminate undesired signals. A loose coupler may be made according to the following instructions and its use is highly recommended.

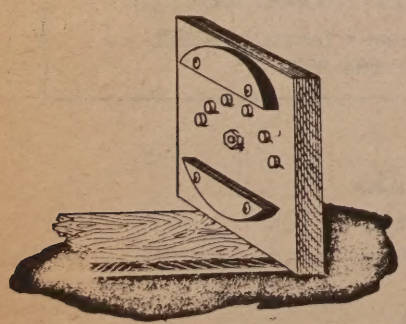

Fig. 5C

This is the End of the Secondary Coil. Note the Pieces Supporting the Coil and the Switch Points.

First procure two pieces of wood, 12" x 1½" x ½", which are, with two other pieces, 5" x ½" x ½", used for the base, and three other pieces, 5" x 5" x ½", to form the ends of the primary and secondary, the base for the secondary being made with a piece, 5" x 2½" x ½". Two cardboard cylinders, 4" and 3" in diameter, must then be procured. The dimensions given in the accompanying illustration need not be strictly followed and a certain amount of leaway is left to the experimenter permitting him to take advantage of whatever material it is easiest for him to secure.

In making the loose coupler, two round pieces of wood must be procured to fit the inside of the two cardboard tubes tightly. The larger one mounted inside of the primary coil may be screwd by means of four small wood screws so that the surface of the disc is even with the edge of the cardboard tube. The smaller disc, which is mounted inside of the secondary, should be sawed into three parts, as shown in Fig. 5B, and only the outside sections be used, so that the switch and switch points may be mounted on the end of the secondary coil and connections made from the taps to the switch points.

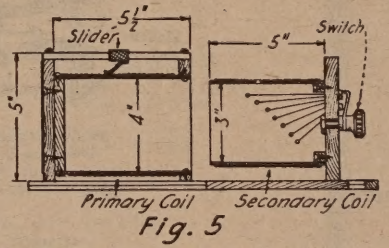

Fig. 5

Dimensions of a Loose-Coupler for Amateur Use. Note How the Taps From the Secondary Coil Are Taken.

One of th square pieces of wood, 5" x 5", should have a large hole cut in the center so that the primary coil may slide into it. The edge of the cardboard tube, upon which the primary is wound, should come flush with the surface of this end, as shown in Fig. 5A.

The primary coil should be wound with No. 20 enameled wire, beginning about ⅜" from the end and up to ⅜" from the other end. The secondary coil is wound with No. 24 double cotton covered wire, in the same manner as the primary, but beginning ⅛" from the end of the tube, sliding inside of the primary. Taps should be taken at ⅜", 1", 1¾", 2½", 3½" and 4⅝", that is, the end of the winding. To make the taps, a small hole is drilled in the cardboard tube, when the distance specified above is reached, then the wire is bent so as to pass it through the hole easily, and the loop thus formed, is pulled inside of the tube, far enough to reach the end of the coil on which the switch is mounted.

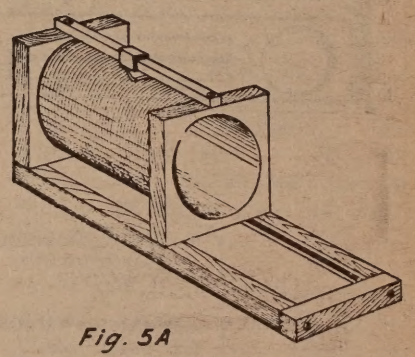

Fig. 5A

The Primary of the Loose Coupler Completed.

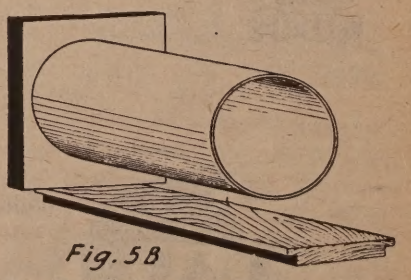

Fig. 5B

Here May be Seen the Secondary Mounted on its Base Which Slides Under the Primary Coil to Vary the Coupling.

Two binding posts should be mounted on the square end supporting the switch, and the end of the winding beginning ⅛" from the edge of the tube connected to one of them, the other one being connected to the

(See LOOSE COUPLER, page 10)

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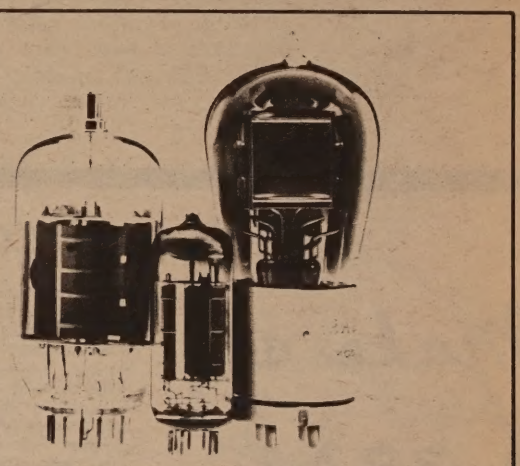

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American Scientists

Radio News for May, 1925

DEEP dyed-in-the-wool scientists are now taking a serious interest in the many phases of radio transmission and reception, and may evolve standards for methods, frequencies and measurements which will aid broadcasting and benefit the denizens of radioland, here and abroad.

The American Section of the International Union of Scientific Radio Telegraphy at a recent meeting in Washington, reported on many problems on which research is underway. A resumé of the session by Dr. J. H. Dellinger of the Bureau of Standards states in part as follows:

"There is a great increase of interest in radio measurements because so many people, have gone into all phases of radio design and engineering, have found it essential to secure real measurements. The accurate measurement of radio frequencies, has attained international importance and popular as well as scientific interest because the reduction of interference in radio reception depends upon it. The vast increase in the use of radio necessitates the operation of transmitting stations as close together in frequency as possible. A practical limit to such crowding is the accuracy of maintenance of station frequencies. The work of numerous investigators is providing means to give the necessary precision of measurement, consistency of adjustment, and absolute accuracy of frequency basis. International comparisons of frequency standards have shown a very satisfactory agreement. One of the interesting means of making such comparisons is the piezoelectric oscillator, a new device which is contributing greatly to current progress, especially in the use of very high frequencies or short waves. The piezoelectric oscillator is essentially a piece of crystalline quartz. Methods and apparatus have been worked out to use such a device to control the frequency of a radio transmitting station, thus giving constant frequency stations.

"There is increasing use of apparatus for measuring the field intensity of radio waves; a number of methods, some of them rapid and convenient, are being used extensively by investigators."

Dr. L. W. Austin stated that measurements show the average intensity of signals from European and California stations has been somewhat less during 1924 than in 1923. The variations of the intensity of received signals from the high-power station at Bordeaux, France, have been found to be the same in France and in the United States, whereas no such correspondence in the received signals is found for measurements in the two countries on the transmitted waves from the high-power station at Rocky Point, Long Island. Measurements of the strength of signals from European stations show a drop in signal strength just after sunset in Europe. Observations of signals from high-power stations over greater distances than have been hitherto attempted, as for example, from Java to California, show that the low frequency stations transmitted to greater distances than hitherto indicated. Measurements at frequencies above 3,000 kilocycles indicate that the fading of such signals is greater, and the reliability of transmission less, at distances under 500 miles than at greater distances. In the winter frequencies above 5,000 kilocycles are observed to be transmitted much better in the daytime than at night, the reverse of conditions with lower frequencies.

Dr. A. H. Taylor reported that the Committee on "Variations of Radio Wave Direction" had found that a shift of the apparent direction of the waves from long wave stations occurs at sunset. The direction shifts toward the east before sunset, returns to normal at sunset, and then usually shifts to the west. The exact cause of this has not yet been fully determined. Some variations of direction in broadcast station transmissions have been found at night. At very high frequencies the changes of direction are very rapid and very great, so that direction measurements are quite impossible.

Measurements of atmospheric disturbances produced in low frequency receiving circuits during the last three years indicate that their intensity was greatest in 1922 and least in 1923. Observations of atmospheric disturbances indicate that their direction often corresponds accurately to the position of storm and cloud areas over the country. At frequencies of more than 3,000 kilocycles atmospheric disturbances are comparatively mild in the daytime, but at night in the summertime they are worse.

Mr. E. F. W. Alexanderson, in presenting the report of the Committee on "Measurement of Interfering Radiation," said that a portable direct-reading instrument for field strength measurements has been developed, which would make it possible to determine the precise amount of interference not only on the main wave of a station, but in the side bands and harmonics. The use of a standardized direct-reading instrument of this kind will make it possible to obtain actual statistical data on interference produced by various radio stations and other sources.

FOR SALE: near mint RCA 648 PV projection TV, electronics restored, very nice, $795. Many other TVs and radios for sale, send SASE for list. Jim Clark, 1006 Pendleton, Lansing, MI 48917. 1-517-323-9595.

Indiana Historical Radio Society

PRESERVATION for POSTERITY

The next meeting of the Indiana Historical Radio Society will be held in Indianapolis at the Sherwood, 6500 South Emerson Avenue on February 21st, 1987. The annual swap meet and flea market opens at 9:00 AM EST with coffee and donuts available. A roast beef manhattan lunch (with salad & beverage) will be served at noon for $5.00.

There will be a popular vote contest:

Class I Your favorite radio.

Class II Any item that looks like a radio but is NOT a radio. i.e. Music box, Cookie jar, Bank, Toys, Cigarette dispenser, etc.

For weather or road information phone:

Paul Gregg (317) 846-3094
Bob Shuck (317) 849-0210
Dr. Ed Taylor (317) 638-1641

For membership application and information send a SASE to: INDIANA HISTORICAL RADIO SOCIETY 245 N. Oakland Avenue, Indianapolis, IN 46201.

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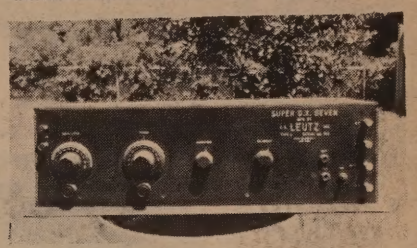

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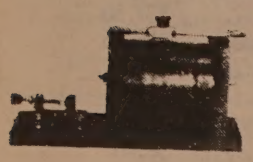
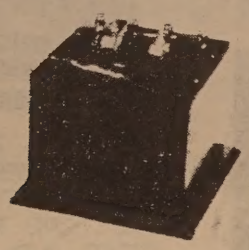
(Continued page 8.)

TRADE NAME: "Hallerio."
MODEL: IV.
TYPE: Crystal detector; no tubes or batteries needed.
CONTROLS: One.
AERIAL: Outside.
PRICE: $4.00 without telephone receivers or antenna.
MANUFACTURER'S NAME: W. B. Haller.

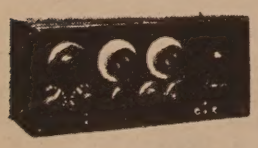


TRADE NAME: "Hallerio."
MODEL: 1½.
TYPE: Crystal detector; no tubes or batteries needed.
CONTROLS: One.
AERIAL: Outside.
PRICE: $1.50 without telephone receivers or antenna.
MANUFACTURER'S NAME: W. B. Haller.



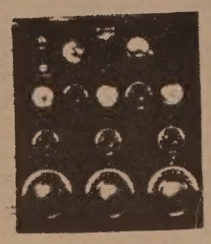
TRADE NAME: "Hallerio."
MODEL: 3½.
TYPE: Crystal detector; no tubes or batteries needed.
CONTROLS: One.
AERIAL: Outside.
PRICE: $3.50 without telephone receivers or antenna.
MANUFACTURER'S NAME: W. B. Haller.

TRADE NAME: Harcourt Reflex.
MODEL: Erla.
TYPE: Reflex.
TUBES: Three.
BATTERIES: None furnished.
CONTROLS: Five.
AERIAL: Outside or inside.
PRICE: $100.00 without accessories.
MANUFACTURER'S NAME: Harcourt Radio Company.



TRADE NAME: "Harmonson."
MODEL: IV-C.
TYPE: One-stage tuned radio frequency amplification, detector and two stages audio.
TUBES: Four.
BATTERIES: Storage "A"; 90 volts "B."
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: $130.00 without accessories; $185.00 with accessoires furnished.
MANUFACTURER'S NAME: H. W. Harmon & Sons Co.

TRADE NAME: "Harmonson."
MODEL: IV-C Grand with built-in loud speaker.
TYPE: One-stage tuned radio, detector and two audio.
TUBES: Four.
BATTERIES: Storage "A"; 90 volts "B."
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: $160.00 without accessories, $205.00 with accessories.
MANUFACTURER'S NAME: W. H. Harmon & Sons Co.

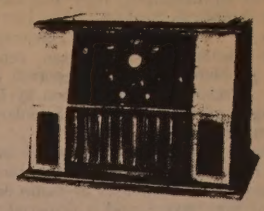


TRADE NAME: Howard Neutrodyne Receiver.
MODEL: For phonograph adaption.
TYPE: Hazeltine neutrodyne.
TUBES: Five.
BATTERIES: "A" and "B."
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: $180.00.
MANUFACTURER'S NAME: Howard Manufacturing Co.

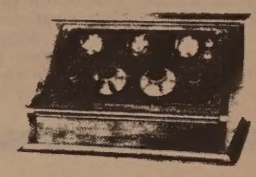
TRADE NAME: Howard Hazeltine Receiver.
MODEL: Table.
TYPE: Hazeltine neutrodyne.
TUBES: Four.
BATTERIES: Not furnished.
CONTROLS: Three.
AERIAL: Indoor, outdoor.
PRICE: $135 without accessories.
MANUFACTURER'S NAME: Howard Mfg. Co.

TRADE NAME: Howard Neutrodyne Receiver.
MODEL: Console.
TYPE: Hazeltine neutrodyne.
TUBES: Four.
BATTERIES: Contained in cabinet.
CONTROLS: Three.
AERIAL: Indoor, outdoor.
PRICE: $325 with loud speaker.
MANUFACTURER'S NAME: Howard Mfg. Co.

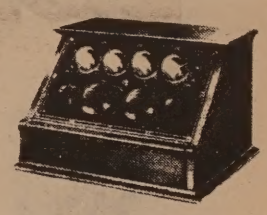
TRADE NAME: Jewel.
MODEL: B.
TYPE: Three stages radio, detector and two audio.
TUBES: Five.
BATTERIES: "A" 6-volt, "B" 90 volts.
CONTROLS: Three.
PRICE: $175.00.
AERIAL: Inside or outside.
MANUFACTURER'S NAME: General American Radio Manufacturing Corp.



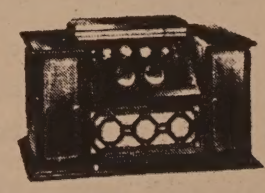
TRADE NAME: "Kennedy."
MODEL: V.
TYPE: Detector and two audio.
TUBES: Three.
BATTERIES: Dry cell or storage, depending on tubes, 45 to 60 volts "B."
CONTROLS: Two.
AERIAL: Outdoor.
PRICE: $75.00 without accessories.
MANUFACTURER'S NAME: Colin B. Kennedy Company.



TRADE NAME: "Kennedy."
MODEL: VI.
TYPE: Detector and three audio.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outside.
PRICE: $105.00 without accessories.
MANUFACTURER'S NAME: Colin B. Kennedy Company.



TRADE NAME: "Kennedy."
MODEL: XV.
TYPE: Two radio, detector and two audio.
TUBES: Five.
BATTERIES: "A" and "B" needed.
CONTROLS: Two.
AERIAL: Inside or outside.
PRICE: $142.50 without accessories.
MANUFACTURER'S NAME: Colin B. Kennedy Company.



TRADE NAME: "Kennedy."
MODEL: XI with built-in loud speaker.
TYPE: Detector and three audio.
TUBES: Four.
BATTERIES: "A" and "B" needed.
CONTROLS: Two.
AERIAL: Outside.
PRICE: $185.00 without accessories.
MANUFACTURER'S NAME: Colin B. Kennedy Company.

(Continued next month.)

EDISON'S MEGAPHONE. The balcony of Professor Edison's laboratory 1878

HISTORY OF THE HORN FOR COMMUNICATION

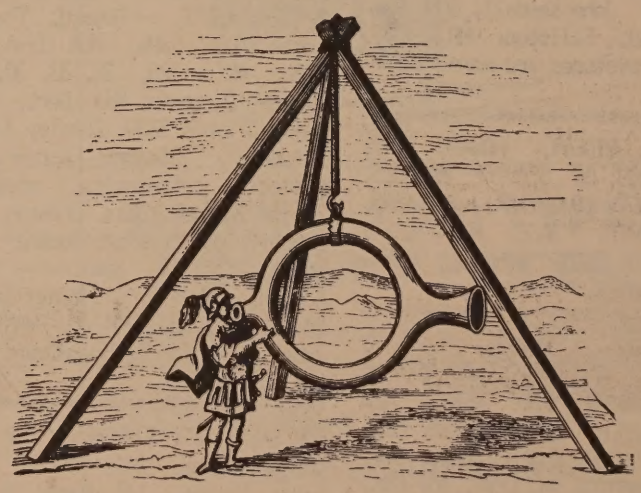
The speaking trumpet, which, for two centuries at least, has been employed to direct sound so that it may be heard over a long distance, is much used at sea, and is often employed on land to direct vocal sounds so that they may be heard above other sounds. It is tolerably certain that the speaking trumpet is of modern origin, and that it is the invention of Samuel Moreland, 1670.

Kircher, in his *Ars Magna et Umbra* and in his *Phonurgia*, mentions a kind of gigantic speaking trumpet, described as the horn of Alexander. According to Kircher, this horn enabled Alexander the Great to call his soldiers from a distance of ten miles. The diameter of the ring must have been 8 feet, and Kircher conjectures that it was mounted on three poles.

Late in the last century Professor Huth, a German, made a model of the horn, and found that it served as a powerful speaking trumpet, but we are considerably in doubt as to the distance through which sounds can be projected through such an instrument.

The ear trumpet, which is the counterpart of the speaking trumpet, has been made in various forms during the last two centuries, but no form yet devised has any advantage over a plain conical tube with a bell-shaped or flaring mouth.

Common forms of ear trumpets are shown at 1, 2. The one at 3 is telescopic; 4 is provided with a diaphragm (shown in dotted lines), which renders the sound less confused, though it does not increase its strength; 5 is a shell having a mouth piece and ear tube; and 6 is a stethoscope. So much for the antecedents of the megaphone.



THE HORN OF ALEXANDER.

Professor Edison, in his researches on sound, has made many curious experiments, one of the most interesting of which is that of conversing through a distance of 1½ to 2 miles with no other apparatus than a few paper funnels. These funnels constitute the megaphone, an instrument wonderful both for its simplicity and effectiveness. In the plan view the details of construction are clearly shown, and our large engraving represents the instrument as it stands on the balcony of Professor Edison's laboratory. A mile and a half distant, at the spot indicated by the two birds, there is another instrument exactly like the one in the foreground.

(See EARLY HORN HISTORY, page 10)

Radio, 2445 Lyttonsville Road, Silver spring, MD 20910

****

CRYSTAL, TUBE EXPERIMENTER'S catalog - $1.00 - None free. Sets, kits, handbooks, plans, coils, supplies, obsolete tube quotations. Laboratories, 1477-H, Garden Grove, CA 92642.

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ELECTRON TUBES: Receiving, transmitting, microwave.. all type available. Large stock. Next day delivery, most cases. Daily Electronics, P. O. Box 5029, Compton, CA 90224 (213) 774-1255.

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CHASSIS——— RCA 88K, 8 TUBES, EYES, CLOCK- TYPE DIAL, 3 BANDS, SPEAKER, SOME RUST, $30.00 —— PHILCO 112, 11 TUBES, $30.00 —— MOTOROLA HS-253, 8 TUBES, AM-FM, LOOP $20.00 —— RADIOS ——— AK-33, E3 SPEAKER $60.00 —— ZENITH 5R303, 5 TUBE AC, WOOD, PUSHBUTTONS $20.00 —— PHILCO E-812-124 YELLOW PLASTIC, 5 TUBE, AC/DC $15.00 —— SETCHEL - CARLSON 49-6, PAY RADIO, LESS COIN MECHANISM, 5 TUBE AC/DC $15.00 ——— COMMUNICATION RECEIVERS —— NATIONAL HRO-W, 5 COILS, POWER SUPPLY $60.00 —— HRO 5TAI, 3 COILS, POWER SUPPLY $40.00 —— NC-183D SPEAKER $60.00 —— HALLICRAFTERS SX-28, CABINET (NO CHROME) $60.00 —— HEATHKIT AR-3 $15.00 —— HEATHKIT HR-1680, SPEAKER $30.00 ——— TEST EQUIPMENT —— RIDER CHANALYST, PROBES, MANUAL $40.00 —— PRECISION E-200-C GENERATOR, MANUAL $20.00 ———— ALL COMPLETE WITH TUBES, SHIPPING EXTRA. JOE WATSON, 3300 ARROWHEAD CIRCLE, ROUND ROCK, TX 78681 (512) 255-7962.

****

FOR SALE ——— MAKE OFFER ——— MUST SELL ——— MAKE OFFER——— BATTERY SETS — Howard, Thorola, North home, Fada, RCA IIIA, Airline, AK's; 20, 35, 33, 30, 57, Mivera Distanta, Wal Bert, Crosley's 3 tubes 52SD, Crosley 3 tube "Trydent", Stewart Warner, 3 Philco cathedrals, speakers, Zenith leather case Oceanic model 8G005YT, Hallicrafter leather case model 572 4 band.—— Russ Schoen, R# 1, Clintonville, WI 54929 (715) 823-6744. —WANTED — Tube socket for AK breadboard with ont volume on.

****

FOR SALE: TEST EQUIPMENT for radio and telephone. SASE for TE list. Serge Krauss, 141 Homan Avenue, Elkhart, IN 46516.

****

FOR SALE: RADIOS, PHILCOS & RCA cathedrals, Kennedy, Radiolas, Atwater Kents, King and others. No. 199 radio tubes and others. Clifford Schoen, 549 Fulton Street, Seymour, WI 54165. Phone (414) 833-2429.

****

FOR SALE 20 SW SETS— LIST SW87. PARTS, TUBES, SERVICE DATA, TEST EQUIPMENT, SASE FOR LIST E86, HARD TO GET TUBES, AK BB PARTS, TUBE SAGA, RADIO NEWS 1920 - 1945. SASE FOR LIST # OFFER 1987. PLUS MORE. KRANTZ, 100 OSAGE AVENUE, SOMERDALE, NJ 08083.

****

LONG ISLAND ANTIQUE RADIOS— For sale and repair. All prices. Reasonable, come to AA Electronics, 178 I, W. Willets Road, Albertson, NY; 11542 at Albertson R. R. Station. Call first, (516) 741-4212.

****

CONSOLES— 10 NICE RADIOS FOR SALE. PHILCO, RADIOLA, MARSHALL, MAJESTIC, KELLOG —— SASE FOR LIST. RUSS OLMSTED, 608 W. THOMPSON LANE, MURFREESBORO, TN 37130.

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TUBES AND POWER REPLACEMENT TRANSFORMERS... LOW LOW... PRICES: MINATURES AT $1.00.... OCTALS AND LOCTALS AT $2.00.... INQUIRE ON OTHERS..... M. LEVY, 101 EAST DRIFTWOOD # 44, FREDERICKSBURG TX 78624. TEL. (512) 997-2534.

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RADIO RELATED TIE CLASPS, LAPEL PINS, R.C.A. - G.E.- PHILCO, ETC. FULL ENAMEL EMBLEMS. SEND S.A.S.E. FOR LIST. YOU WILL BE GLAD YOU DID. MR. MICHAEL S. SABODISH, SR., 11-A MATAWAN AVENUE, CLIFFWOOD, NJ 07721.

****

ROTARY SPARK GAP, medium power. Works fine. $95; Hallicrafters S-85 Receiver. Excellent. $85; Three coil mount with honeycomb coils. $45; Bodine loop antenna. Beautiful. $75. All plus UPS. Paul C. Crum, W9LC, 6272 N. Cicero Avenue, Chicago, IL 60646. 1 (312) 282-3033

****

INDIANA HISTORICAL RADIO SOCIETY information and membership application send SASE to: IHRS, 245 N. Oakland Avenue, Indianapolis, IN 46201

****

FOR SALE—— 3 AERO COIL SHORT WAVE REMOVEABLE COIL TUNERS. 1945 RADAR BOOK U.S. AIR FORCE. TRANSMITTER CRYSTALS. U.S. AIR FORCE WW2 PHOTO. 1913 MICROPHONE. TRANSMITTER TUBES 12 IN. LONG. RUSSELL SCHOEN, R #1 BOX 224, CLINTONVILLE, WI 54929. (715) 823-6744.

****

FOR SALE: PHILCO 87. ZENITH 10S160. Silvertone R101. Crosley fiver. Crosley 515. Airline "Movie Dial" and others. List. WOIAZ, P. O. Box 141, Goodman, MO 64843. (417) 364-7936.

****

Philco antenna kit in box for $20.00. RCA fan $25.00. RCA wave card $10.00. Philmore detector in original envelope $12.00. Radio puzzle $22.00. RCA 100A speaker $16.00. 3 handheld games 1 radio $25.00. Royal typewriter as used in wireless stations $25.00. Aerial eliminator in box $4.00. Antenna wire, one reel $12.00. Medical spark coil $35.00. Many books $4.00 to $10.00 each. Insulators 50 cents. Tubes in original boxes mostly from 1930 $1.00. Super Wasp schematic $15.00. Knapp Electric Questioner and Practice Wireless buzzer game $25.00. 1930 and 40's records $1.00. Add-A-Speaker $10.00. Anthony Caserta, 47 Vista Lane, Levittown, NY 11756. (516) 731-7175 evenings.

****

WATCS TRADER publication - published by WA7YCZ and WB7VXR. If you are wanting to sell, buy or trade equipment, this is the trader, you'll want to subscribe to. All ads quickly circulated, and the ad rate is the most economical around. Includes cartoons about hams. In its third year. 24 issues $10.00. Woody's Amateur Trader Cherry Sheets (WATCS), P.O. Box 202, Lynden, WA 98264.

****

AMATEUR RADIO RECEIVERS AND TRANSMITTERS — MAGAZINES —TUBES PHOTOS — .50. SASE FOR LIST — SEND YOUR WANT LIST. K4UJZ, RUSS OLMSTED - 608 W. THOMPSON LANE, MURFREESBORO, TN 37130.

****

COLLECTION OF Radio, Popular Science, Science and Invention, etc. magazines, 320 in all for $750. or best offer; 81 antique radio tubes for $225. or best offer, Emerson and Sentiel TV's $125. each. Large mumber of antique radios and phonographs for sale. Call Charles Rakes at (501) 273-5340 or send a large SASE for list of items for sale to: Charles Rakes, P. O. Box 445, Bentonville, AR 72712.

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FOR SALE: HALLICRAFTERS SKY- RIDER JR., MODEL S-41-G, FAIR CONDITION, WORKS, WILL SHIP FOR BEST OFFER. LOUIS YADEVIA, 601 CHURCH LANE, UPPER DARBY, PA 19082.

****

RIDERS 1 THRU 8 WITH INDEX. FAIR. WESTON 785, EXCELLENT, LEADS, MANUAL, OAKCASE. MAKE OFFER OR CALL. BILL THOMPSON, 1095 NW 147 STREET, MIAMI, FL 33168. (305) 685-1993.

****

RCA CT-100, fully restored 1954 COLOR TV, Bill Russell, 3236 Laurel Canyon, Santa Barbara, CA 93105. (805) 682-8115. Send $1.00 and SASE for color picture.

****

NEW BOOKS ABOUT OLD RADIOS, PHONOGRAPHS. 6 page catalog. Long SASE to Sound Box, Dept. HS, Box 226, Ettrick, WI 54627.

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FOR SALE, NEW AND USED RADIO TUBES. Late 1920's thru early 1940's. SASE for list. FOTHE, 10 JACKSON ST., SLOATSBURG, NY 10974.

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FOR SALE— SCOTT - RADIO - MINT - 800B - ALL ORIGINAL, Details included. Buyer pays delivery. $650.00. Tel. (216) 481-0226. Frank Hoffert, 19605 Chardon Road, Cleveland, OH 44117.

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FOR SALE; UNUSED AND USED TUBES, capacitors, speakers, etc. Send SASE for lists. C. Elmer Nelson, 11 S. Church Street, Princeton, IL 61356.

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FOR SALE TUBE COLLECTION — LARGE SASE FOR LIST. BILL THOMPSON, 1095 NW 147 ST., MIAMI, FL 33168 (305) 685-1993.

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WANTED

RUSS'S OLD RADIO MUSEUM WANTS OLD AMATEUR TRANSMITTER AND RECEIVERS, MAGAZINES, TUBES, BOOKS, KEYS, ETC. IN THE 1920'S-30'S. I HAVE A LIST OF FOR SALE ITEMS. — PLEASE TELL ME YOURS WANTS. — SEND A SASE. K4UJZ, RUSS OLMSTED, 608 W. THOMPSON LANE, MURFREESBORO, TN 37130.

S.A.S.E. is a self addressed stamped envelope.

WANTED COAXIAL OR TRIAXIAL SPEAKERS of Jensen, Trusonic, Tannoy, Altec 604's. Western Electric equipment (tubes, amps., drivers, horns, speakers, microphones and parts). Radio tubes (50's, 211, 845, 8005) David Yo, P. O. Box 832, Monterey Park, CA 91754. Tel. (818) 576-2642.

CATHEDRAL RADIOS, MUST BE NICE AND WORKING CONDITION. WILL PAY TOP DOLLAR. ALSO WANT OTHER UNUSUAL AC RADIOS. HAROLD PERKINS, 4468 SUN VALLEY DRIVE, LAS VEGAS, NV 89121.

WANTED —— RCA CREDENZA'S, Edison windups - speaker systems and components, JBL Hartfield, Paragons- Altec Laguna, Magnificent, 515A/B, 288B/C, 604B/C/D/E, E.V. Patricians, Tannoy Autograph, GRF - Red/ Silver/ Gold, Jensen G610, Western Electric theatre equipment, speakers, drivers, horns, electron tubes, mixers, x-formers, x-overs, tubes, round top 45, 50 - W.E. 252A, 300A/B, 350B, etc. Charles Dripps, 4331 Maxson Road, El Monte, CA 91732. (818) 444-7079.

WANTED —— GRANDFATHER CLOCK RADIO and Radiola IV. Gordon Wilson, 11108 - 50 Avenue, Edmonton, Alberta, CAnada, T6H 0H9

WANTED— OLD 1960s or 70s large Allied Radio Catalogs. Earl Phillips, 311 David Lane, Maryville, TN 37801.

WANTED: BOOKS; buy, beg, borrow, rent or steal. Twining, "Wireless Telegraphy and High Frequency Electricity;" Curtis, "Construction of Induction Coils & Transformers;" Collins, "The Amateur Electrician's Handbook;" and other books with Tesla coil projects. Need data for forthcoming bibliography. TCBA, RD 3, Box 181, Glens Falls, NY (518) 792-1003.

WANTED- INSTRUCTIONS FOR OPERATING Hickock tube tester model # 600-A plus supplement tube data sheets. Zerox copies OK. Frank Hoffert, 19605 Chardon road, Cleveland, OH 44117. Tel. (216) 481-0226.

WANTED— OLD 1960s or 70s large Allied Radio Catalogs. Earl Phillips, 311 David Lane, Maryville, TN 37801.

WANTED— FOUR WIRE OSC. COIL 266KC or Philco part 322828. Don Aldred, 39 East 8th Street, Jacksonville, FL 32206.

URGENT— URGENT—— NEED PART FOR VOLUME CONTROL FOR AK BREADBOARD MODEL 10. STRIP THAT HAS WIRE WOUND ON INSIDE OF CONTROL. RUSS SCHOEN, R#1, CLINTONVILLE, WI 54929.

WANTED: INFORMATION OR EQUIVALENT CHARTS ON MUTER BRAND BALLAST TUBES. OLD CATALOGS MAY LIST THEM. ANTHONY JACOBI, 8053 MAYWOOD, RALSTON, NE 68127.

WANTED - New or used 0A2 voltage regulator tubes. Need 1200, must be reasonable. Tom Burgess, Box 9769, Little Rock, AR 72219 - (501) 565-1750 evenings.

WANTED: GRANDFATHER CLOCK RADIO, AK, Philco, etc. Gordon Wilson, 11108 - 50 Avenue, Edmonton, Alberta Canada T6H 0H9.

WANTED: ONE REMLER DRUM DIAL WITH DIAL PLATE. THIS DIAL IS GEAR DRIVEN AND IS ABOUT 4" IN DIAMETER. MUST HAVE A CLEAN DIAL SCALE. WILL PAY $25 FOR A CLEAN COMPLETE UNIT. BOB HERBIG, 4178 CHASIN STREET, OCEANSIDE, CA 92056.

AMATEUR RECEIVERS— GREBE, HAMMARLUND, NATIONAL BRETING, HOWARD, HALLICRAFTER, ALSO EARLY QST'S, HANDBOOKS, CRYSTAL SETS. K4UJZ, 608 W. THOMPSON LANE, MURFREESBORO, TN 37130.

RADIOLA Balanced amplifier— RADIOLA IIIA. whole—— parts—— junk. State price and condition when corresponding. B. Block, 2118 Winn, Kemah, TX 77565.

WANTED — TWO WINDING OSCILLATOR COIL, 265 kc I.f. frequency badly needed. For sale Thompson flybacks and yokes, two thru 167. $12.95 postpaid. —— Don Aldred, 39 East 8th Street, Jax. FL 32206

RADIOLA ITEMS WANTED: Vocarola, RE, AR, Concert Receiver; Radiola IV, VI, VIIB / IX grand; any of AA series. CASH OR TRADES. Rosenthal, 507 South Maryland Avenue, Wilmington, DE 19804

WANTED: SET OF RIDER MANUALS, Vol. 1 thru 8. Must be realistic price. Michael Sabodish, 11A Matawan Avenue, Cliffwood, NJ 07721. (201) 566-1486.

HR-3 RCA ELECTRON TUBE HANDBOOK. Industrial, receiving and transmitting tube technical bulletins by GE, Sylvania, etc. Nick Tusa, K5EF, 129 Somerset, LaPlace, LA 70068 (504) 652-4904.

WANTED: LARGE HIGH VOLTAGE VARIABLE CAPACITOR. TCBA, RD 3, Box 181, Glens Falls, NY 12801

INFORMATION NEEDED— Who can identify the speaker unit for me on the front cover of THE HORN SPEAKER, May 1986 issue? I also need a base for same with or without driver. All replys acknowledged. Bill Stuber, P. O. Box 153 (406 S. 1st Avenue), Woodward, IA 50276 515# 438-2008.

WANTED: COLORFUL "CATALIN" plastic radios; Fada, Emerson, DeWald, Addison, etc. Top prices paid. Mint condition only. R. W. Oliver, 355 Highwood Avenue, Leonia NJ 07605 (201) 944-0777.

WANTED— ANY McMURDO SILVER ELECTRIC set with or without cabinet. Masterpiece I, II, III, IV, V, VI 14-15, 15-17. Any literature, McMURDO SILVER TIMES or FORUM. Magazines. Also 1935- 1939 Zenith consoles. We pickup most areas of U. S. and Canada. Frank and Mary Rasada, 12507 Pinegrove Lane, Cerritos, CA 90701. Days: (714) 951-9591. Evenings: (213) 926-6722, leave message for return call.

WANTED— INFORMATION / DATA on the "SHELDON RADIO COMPANY" that was active in Los Angeles 1925-1931. Ed Sheldon, 656 Gravilla Place, La Jolla, CA 92037.

WANTED: SILVERTONE MODEL 4500A, black plastic table model— only interested in cabinet. Tom Johnson, 215 E. 7th Street, Ames, IA 50010.

WANTED: INFORMATION ON PEERLESS wireless, Milo Bailey, Thomas E. Clark (TECLA), and any other pre 1930 Michigan manufacturers: brochures, ads, articles. photocopies ok. Tips welcomed. Oran Sauder, 316 Wellington, South Lyon, MI 48178. (313) 437-4413.

SPARK EQUIPMENT—— Especially 25,000 volts Commercial Spark Condenser, Rotary gap or complete sets. Paul C. Crum, 6272 N. Cicero Avenue, Chicago, IL 60646. 1(312) 282-3033.

WANTED: RADIO CORRESPONDENCE course kits. AC or battery. Leo Teply, geddes, SD 57342.

WANTED: DON'T THROW AWAY THOSE ELECTROMECHANICAL POWER SUPPLIES AND PARTS 6 VOLT AND 12 VOLT VIBRATORS, OZ4's, TRANSFORMERS. CASH PAID OR TRADES. MARVIN ROTH, 14500 LaBELLE, OAK PARK, MI (313) 399-5993.

A GERMAN MADE RADIO. Small table model— working condition. Phone or write. PETERSONS, 3115 North 61st Street, Lincoln, NE 68507. (402) 466-7548.

HALLICRAFTERS SX-88, parts or junker. Gene Mottern, 313 Royal Drive, Kingsport, TN 37663.

WANTED: A.K. BREADBOARD PARTS; antenna coils, type 11 tuner coil-tube unit. detector unit, potentiometers. 3 tube detector amplifier unit, switches, highest prices paid. DeWitt L. Bills, 5237 Upton Avenue North, Minneapolis, MN 55430. (612) 521-7109.

WANTED: LARGE HIGH VOLTAGE variable capacitor. Books and magazines on electricity, medical electricity and wireless telegraphy. Want list available. TCBA, RD3, Box 181, Glens Falls, NY 12801.

WANTED: LID FOR RADIOLA 20 and ATWATER KENT 20C, power supply for U.S. Radio and Television model 80. Richard Peterson, 3940 Lolan Ct., Marrero, LA 70072.

WANTED—— A COPY OF SCHEMATIC for portable radio. R.E. 8000 - Ross Electronics and Manual. Michael J. Doback, 592 Southlawn, Birmingham, MI 48009.

CHELSEA MODEL 102 AF transformer, working or not. Will buy junker set to get one. Transformer nameplate says Songbird Midgie. P. A. Kinzie, 713 E. Beale Street, Kingman, AZ 86401.

WANTED: FANCY LOOKING GRANDFATHER CLOCK RADIO. Also AK models 558, 217, 165, 246, 944. Also Radiola IX, Airline 20 and Philco 20B. Need dud WD11 tubes. Gordon Wilson, 11108-50 Avenue, Edmonton, Alberta, Canada T6H 0H9.

WANTED: SILVERTONE MODEL 4500A, black plastic table model— only interested in cabinet. Tom Johnson, 215 E. 7th Street, Ames, IA 50010.

WANTED: RADIOLA X CHASSIS FOR PARTS. Gordon Wilson, 11108 - 50 Avenue, Edmonton, Alberta, Canada T6H 0H9.

TV's BOUGHT —— NEED 10", 7", etc. —— pre 1950+ Predictas, early color, paying $40 - $350. PRE- WAR TV's - TT5, TRK, LOTS MORE - $1200 - $4000. Books on TV's, pre 1948. Harry Poster, Box 1883H, So. Hack., NJ 07606. (201) 794-9606.

WANTED— WIRING CIRCUIT for RADIODYNE WD17- 5 tube radio, made, (Western Coil and Electric) Co., Racine, Wisconsin, a copy, a tracing or anything to get the wiring hookup. Herb DeGarmo, 203 3rd Street, Early, IA 50535.

WANTED: PHILCO 60 CHASSIS. Rheostat knob for a Crosley 51. Marc Ingenthron, 9215 W. 83rd Street, Overland Park, KS 66204.

WANTED: DRIVER AND METAL PARTS FOR MUSICMASTER HORN SPEAKER. HALLICRAFTER SX-17 AND SPEAKER. CHARLES FURTAK, 241 OAK, ELMHURST, IL 60126.

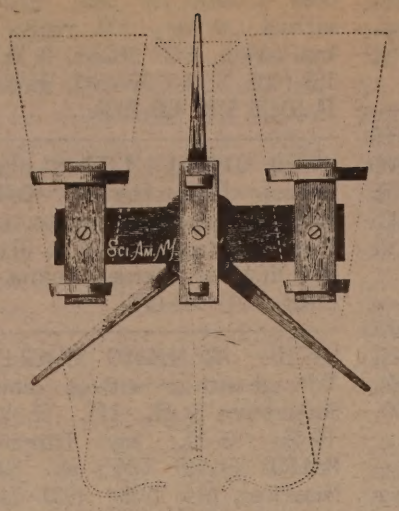
WANTED HALLICRAFTER SX-71 OR NATIONAL NC-183 in excellent condition. Please state price and condition when corressponding. Roy Schmitt, Rt. 1, Box 800 Lot 84, Converse TX 78109 (512) 659-0094.

EARLY HORN HISTORY

The two larger funnels are 6 feet 8 inches long, and 27½ inches in diameter at the larger end. These funnels are each provided with a flexible ear tube, the end of which is placed in the ear. The speaking trumpet in the middle does not differ materially from the ordinary ones. It is a little longer and has a larger bell mouth. With this instrument conversation can be readily carried on through a distance of 1½ to 2 miles. We have conversed and heard singing through the distance named, although both the singing and talking were in the ordinary tone of voice. A low whisper, uttered without using the speaking trumpet, is distinctly audible at a thousand feet, and walking through grass and weeds may be heard at a much greater distance

August 24, 1878

Scientific American.



PLAN OF MEGAPHONE.

NEED HEADPHONE PARTS? Ken Ladd in Minneapolis, Minnesota reports a good place to buy headphone repair parts through a catalogue. More good news from Ken is that the same company sells a permanent magnet that recharges headphone magnets without disassenbly. The catalogue is number 10 from J. H. Ambrose, RD 2, Box 134, Canandaigua, New York 14424.

Tele-visionary

Televisions have been saddled with pejorative nicknames such as "idiot box" and "boob tube" since the days of Howdy Doody, but the squat sets that sit in most of America's living rooms are living history to Arnold Chase, who has a collection of more than 300 antique models.

A mere seven years ago, he bought his first old set for $2,000, a financial leap of faith rare in first-time collectors. "Back then I was questioning my sanity, and I felt guilty about it for about a month afterward," he says.

The owner and president of WTIC-TV in Hartford, Conn., he originally thought his collection could be displayed at station offices, but he soon found that an assembly of television sets takes up more space than a dinner party of sumo wrestlers. He stores the sets in unused space in the building housing his station's offices.

Most of his sets are pre-1950 models, including early mechanical ones, an RCA TRK-12 (one of 13 exhibited at the 1939 New York World's Fair) and a 1951 CBS/Columbia 12CC02, the first color set, which used a synchronized wheel of colored filter material spinning in front of it to produce a color picture.

And what sort of exotic antique does Chase use at home? He has a huge GE projection-screen television with stereo sound, connected to a satellite dish. Which is just as well: Most of the sets in the collection don't work.

INSIGHT / OCTOBER 20, 1986

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LOOSE COUPLER

switch lever. On the opposite end, to which is fixed the primary coil, should also be mounted two binding posts for the connection to the slider rod and to the end of the wire nearest the secondary coil.

The wire of the primary coil should be wound tightly so that the turns do not move when the slider runs along the turns, over the surface of which the enamel has been removed with a piece of sandpaper, or a fine file. The secondary coil, which is mounted on a piece of wood sliding between the two guides from the base, should be mounted so that it does not touch the primary coil when moved inside to tighten the coupling, this to be looked for if the space between the primary and secondary coils is small.

In order to receive long wave-lengths, it is necessary to use the single slide tuner described last month connected between the aerial and the primary. Where a single slide tuner is used in this manner it is called a loading coil and its purpose is to increase the number of turns of wire between the antenna and ground without increasing the size of the primary of the loose coupler.

The loose coupler when used in the foregoing circuits and in the circuits to be decribed later forms a very sensible means for tuning, and may be used with satisfaction without necessitating a great deal of study on the part of the experimenter. For reception over moderate ranges it is doubtful that a more suitable arrangement could be had.

Fig. 6 shows the connections of a loose coupler with a detector and phone condenser.

For best results, a variable condenser should be used across the secondary so as to provide a means of nnely tuning this circuit. Another condenser may also be connected in series with the aerial.

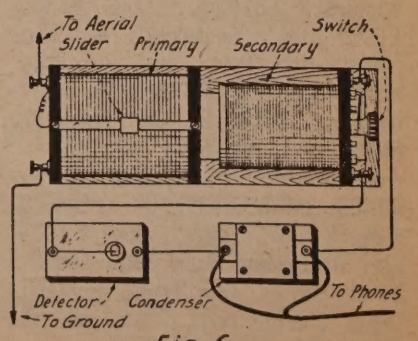

Fig. 6

Hook-up for the Loose Coupler Described in the Article.

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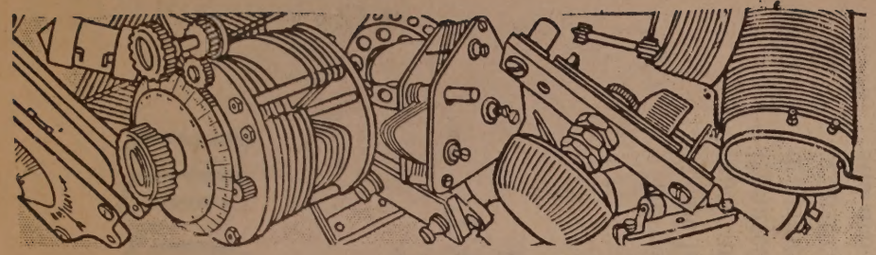

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- *ANT, RF, OSC, IF Coils
- *Speaker Grill Cloth
- *Pilot Lamps
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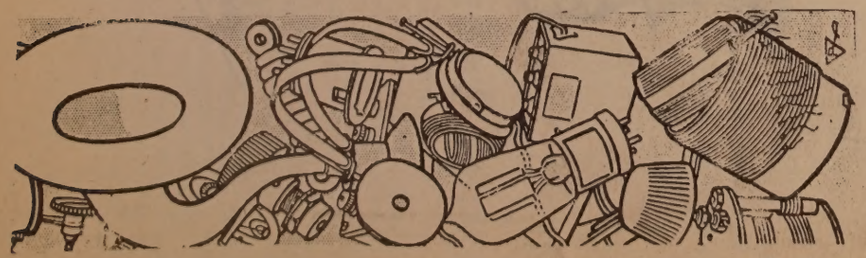
Also can provide reprints of the following Olde Tyme Radio publications:

- *Atwater Kent Instructors Manual
- *Atwater Kent Equipment Catalog
- *Radiola IIIA Manual (See flyer for details.)
- .VINTAGE RADIO IDENTIFICATION SKETCHBOOK by D. H. Moore

And much, much more, also as a convenience to you, we can even provide copies of those ever popular books 'Vintage Radio & Flick of the Switch' in soft covers. Schematics of many radios and TV sets are also available. For free flyer send SASE to Olde Tyme Radio Company, 2445 Lyttonsville Road, Silver Spring, MD 20910.

Wish to reach us by phone? The number is 301-585-8776.

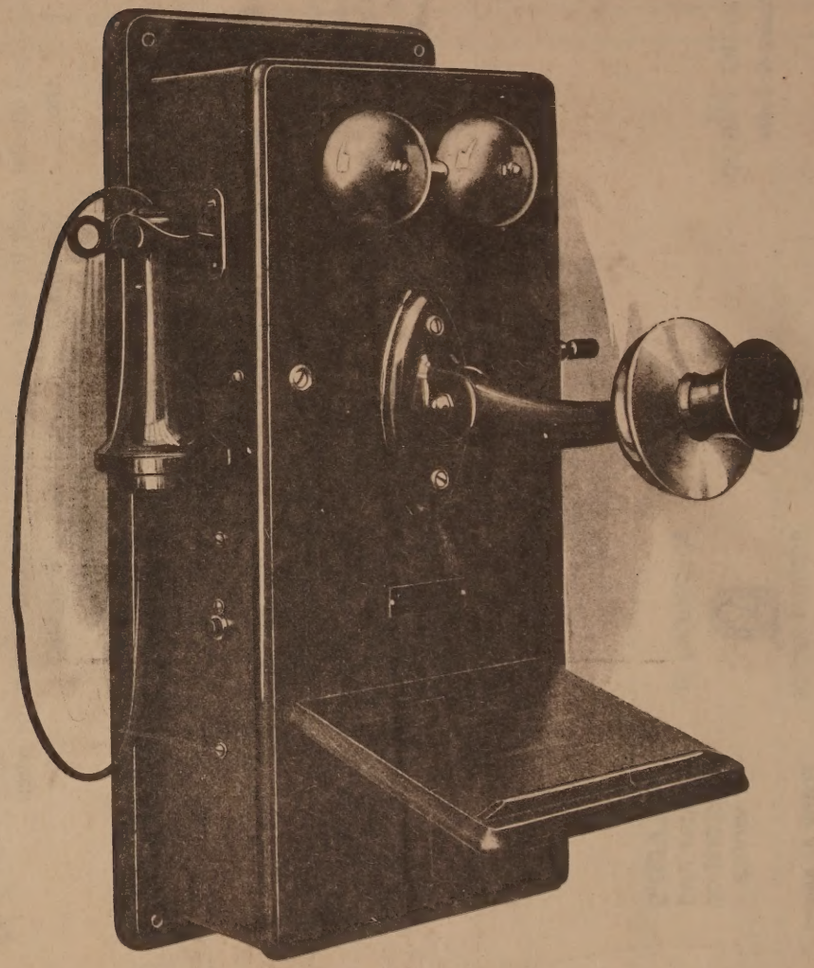
Please call between 10:00 a.m. and 10:00 p.m. est.



January

THE HORN SPEAKER

1987



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ART B CORBUS
5704 11TH AVE NW
SEATTLE WA -98107